

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 December 2002 (27.12.2002)

PCT

(10) International Publication Number  
**WO 02/102828 A3**

- (51) International Patent Classification<sup>7</sup>: **A61K 39/295**, C12N 7/01 (74) Agent: **MICHAUD, Susan, M.**; Clark & Elbing LLP, 101 Federal Street, Boston, MA 02110 (US).
- (21) International Application Number: **PCT/US02/17374** (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: **31 May 2002 (31.05.2002)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data: **60/295,265** **1 June 2001 (01.06.2001)** **US** (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application: **US 60/295,265 (CIP)**  
Filed on **1 June 2001 (01.06.2001)**
- (71) Applicant (*for all designated States except US*): **ACAM-BIS, INC.** [US/US]; 38 Sidney Street, Cambridge, MA 02139 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **KLEANTHOUS, Harold** [GB/US]; 51 Russel's Way, Westford, MA 01886 (US). **OROS, Larisa** [US/US]; 1209 Boylston Street, Apartment #55, Boston, MA 02215 (US). **MILLER, Charles** [US/US]; 32 Maple Avenue, Medford, MA 02155 (US).
- Published:  
— *with international search report*
- (88) Date of publication of the international search report:  
**9 October 2003**
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 02/102828 A3

(54) Title: **CHIMERIC FLAVIVIRUS VECTORS**

(57) Abstract: The invention provides chimeric flavivirus vectors including foreign peptides inserted into the envelope proteins of the vectors and methods of using these vectors.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/17374

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 39/295, C12N 7/01

US CL : 424/202.1, 218.1; 435/ 456,173.1, 235.1, 236, 320.1

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/202.1, 218.1; 435/ 456,173.1, 235.1, 236, 320.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,184,024 B1 (Lai et al) 06 February 2001 (06.06.2001), see Examples 1 and 2, Figure 1, and claims.	9- 18
Y	Chambers, T. et al., Yellow Fever/Japanese Encephalitis Chimeric Viruses: Construction and Biological Properties. 1999 Journal of Virology Vol. 73 (4), pages 3095-3101, see entire document.	9- 18
Y,P	Guirakhoo, F. et al., Construction, Safety, and Immunogenicity in Nonhuman Primates of a Chimeric Yellow Fever-Dengue Virus Tetraivalent Vaccine. 2001 Journal of Virology Vol. 75 (16) pages 7290-7304, see pages 7290, 7291, Figures 2 and 3.	9- 18
A	Hurrelbrink, R. et al., Attenuation of Murray Valley Encephalitis Virus by Site-Directed Mutagenesis of the Hinge and Putative Receptor-Binding Regions of the Envelope Protein. 2001 Journal of Virology Vol. 75: 7692-7702, see abstract, 7692, 7693, and 7698- 7701.	1-8
Y	Goryshin, I.Y. et al., Tn5 In Vitro Transposition. 1998 Journal of Biological Chemistry, Vol. 273 (13), pages 7367 - 7374, see entire document.	5

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	*T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

18 April 2003 (18.04.2003)

Date of mailing of the international search report

28 MAY 2003

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Myron G. Hill

Telephone No. 703-308-0196

*James C. Howard*  
for

# INTERNATIONAL SEARCH REPORT

PCT/US02/17374

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Mandl, C. et al., Attenuation of Tick-Borne Encephalitis Virus by Structure-Based Site-Specific Mutagenesis of a Putative Flavivirus Receptor Binding Site. 2000 Journal of Virology Vol. 74(20), pages 9601-9609.	1-8

**INTERNATIONAL SEARCH REPORT**

PCT/US02/17374

**Continuation of B. FIELDS SEARCHED Item 3:**  
WEST- US PATS, PG PUBS, also EPO, JPO, and Derwent abstracts  
STN- MEDLINE  
flavivirus, chimera, envelope, insertion, transposon, yellow fever